

Concentrations of Polybrominated Diphenyl Ethers (PBDE) in Hood Canal

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Polybrominated diphenyl ethers (PBDEs), synthetic flame retardants introduced in the late 1970s to reduce the flammability of household and commercial products, are a new pollution concern facing Puget Sound. Structurally similar to polychlorinated biphenyls (PCBs), it is now known that PBDEs break down and enter the ecosystem, passing through the food chain and accumulating in tissues of organisms feeding at the top of the chain, causing serious health issues. During their June 2004 sediment monitoring work, the Washington State Department of Ecology's Marine Sediment Monitoring Team added a suite of 5 PBDE congeners to the list of chemicals measured in sediments collected for the Puget Sound Ambient Monitoring Program, including 47 (a tetra PBDE), 99, 100 (penta PBDEs), 153, and 154 (hexa PBDEs). These congeners were chosen because they are predominant in commercially available PBDE mixtures and their levels in the environment have been measured in other parts of the world. Thirty random stations were sampled throughout the length of Hood Canal. Results of the PBDE analysis are presented. This study, along with future sampling, will establish a baseline of data indicating current levels and the distribution of PBDEs in Puget Sound sediments.